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DEATH-RATE OF THE UNITED STATES IN 1900.

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The death-rate means the ratio of deaths to population, or, more specifically, the average number of persons dying in the course of a year to each thousand persons living in the middle of the year. It is found by multiplying the number of deaths which occurred in a given population during a year by one thousand, and dividing the product by the population enumerated or estimated as alive in the middle of that year. This definition shows that the accuracy of a death-rate, like that of any other ratio, depends upon the accuracy of the two elements, in this case the deaths and the population.

The main use of a death-rate is to measure the effective vitality and indicate the sanitary condition of a population. It constitutes the only trustworthy measure of public health. Neither general opinion nor the observation of expert physicians gives a basis for more than a crude and very inaccurate idea regarding the health of a community. Neither furnishes a safe basis for comparing one population with another at the same date, much less for determining whether the health of a population has advanced or declined within a given period of time. For this reason the public health

work of a country, state, or city, is largely dependent upon the accuracy and completeness of its work in vital statistics, and especially in mortality statistics.

The death-rate of an enormous and populous country like the United States is open to all the objections and qualifications which beset the use of similar averages in other fields. To say that the death-rate of the United States is about 16 is somewhat like saying that the average number of persons on a square mile in the United States is 26. But, if the average death-rate in 1890 was 18, and in 1900 16, this is a more important fact and a far more significant index of progress than the statement that the average density of population was about 21 in 1890 and 26 in 1900. In each case the general average is important as a standard from which to measure local deviations and temporal changes.

All this is elementary and well known. But the fact that no one knows the death-rate of the United States is also familiar, and in the light of that fact it might well be asked, what is the use of arguing that the information, if obtainable, would be of great value? The object of the present paper is to show that with the material presented by the Twelfth Census a closer approximation to the death-rate of the United States than has ever yet been made is possible, and by a lengthy and detailed computation to make that approximation. It may be well to begin with a brief review of previous efforts to ascertain the death-rate of the United States.

Work on the basis of which a death-rate for the United States might be computed began in 1850, when for the first time mortality schedules were provided on which was to be entered "the name of every person who died during the year ending June 1, 1850." The result of this inquiry was to get a record of 324,394 deaths as having occurred in the United States from June 1, 1849 to June 1, 1850. As the population enumerated on the later date was 23,191,876, this would give, without allowing for the increase of popula-

tion between December 1, 1849 and June 1, 1850, a death-rate of 13.9. But the census authorities commented on this death-rate in the following terms:—

The federal census of 1850 furnishes the first instance of an attempt to obtain the mortality during one year in all of the States of the Union, and had there been as much care observed in the execution of the law as was taken in framing it, and in the preparation of necessary blanks, a mass of information must have resulted relating to the sanitary condition of the country attained as yet in no other part of the world. This, however, would have been expecting too much. It was to take for granted, first, that the person interrogated in each family, whoever he might be, with regard to its affairs, would be able to recollect whatever death had occurred in it within the period of twelve months; and, second, to give the true designation of the cause of such death. One would think it not unreasonable that the facts of actual deaths would be striking and impressive enough in every household to be remembered for a much longer period than a single year, yet the returns of the marshals have only to be examined with care, and deductions made from them, to satisfy the most careless observer that in the Union at large at least one-fourth of the whole number of deaths have not been reported at all. Making allowance for even this error, the United States would appear to be one of the healthiest countries of which there is any record. The varying ratios between the States, as drawn from the returns, show not so much in favor of or against the health of either as they do, in all probability, a more or less perfect report of the marshals. Thus it is impossible to believe Mississippi a healthier State than Rhode Island, etc. For *rural* population the returns are no doubt nearer correct than they are for *urban*, and the old States are in general better reported than the new.

It may also be said in favor of the returns as published that they constitute but a beginning, and are not, perhaps, further from the truth than were the first attempts in States having registration systems. The same improvement as in these States may be expected hereafter. The publication of this volume will stimulate investigation and lead to a better understanding of the importance of the subject.

In regard to the number of *deaths* the returns of the census are not likely to deceive any one, since an attempt to reason from them would exhibit a degree of vitality and healthfulness in the United States unparalleled in the annals of any nation, and demonstrate between county and county and State and State the most extraordi-

nary differences in sanitary conditions. The truth is, but a part of the deaths have been recorded, varying for sections from a very small to a very large part of the whole.

In each of the following five censuses, those of 1860, 1870, 1880, 1890, and 1900, the same method was followed. The figures that resulted were used also for other purposes entirely foreign to the present discussion. Those which could be of any value in determining the death-rate of the United States are presented in the following table:—

Date.	Population.	Deaths.	Apparent death-rate per 1,000.
1850	23,191,876	323,023	13.9
1860	31,443,321	394,153	12.5
1870	38,558,371	492,263	12.8
1880	50,155,783	756,893	15.1
1890	62,622,250	875,521	14.0
1900	75,994,575	1,039,094	13.7

The general result of this method of ascertaining the total number of deaths occurring in the United States during the year preceding the census is to show that not more than about three-fifths have been reported. Accordingly, one may say with confidence that the true death-rate in every case was greater than the death-rate shown by the preceding table, but how much greater no one can tell.

In 1880, for the first time, an effort was made to determine the death-rate of what was known as the registration area, namely, that area in which the records of deaths made by State or municipal authority was much more complete than the record obtained by the enumerator's visits to the families. Under these circumstances the Census Office has felt warranted and, indeed, obliged to accept the local records, not as entirely faultless, but as far better than anything it could substitute for them through agencies of its own.

The following table shows for each of the last three censuses the population of continental United States, the population of the registration area, the per cent. of the former living in the latter, the deaths reported for the registration area, and the resulting death-rate.

Date.	Population of		Per Cent. of Population of United States in Registra- tion Area.	Deaths in Registration Area.	Death-rate per 1,000.
	Continental United States.	Registration Area.			
1880 .	50,155,783	8,538,366	17.0	178,645	20.9
1890 .	62,622,250	19,659,440	31.4	386,212	19.6
1900 .	75,994,575	28,807,269	37.9	455,207	17.8

The preceding table shows that the proportion of the population of the United States having admissible local records of deaths increased in twenty years much faster than the population of the country, and included in 1900 three-eighths of that population, where in 1880 it included only one-sixth. In taking these figures as a basis for ascertaining the death-rate of the United States, two questions arise:—

1. How accurate are these death-rates for the registration area?

2. How far is the death-rate in the registration area an index to the death-rate of the entire United States at the same date?

These death-rates for the registration area are erroneous in that the population is that of the end rather than of the middle of the year, and in that omissions from the record are probably more numerous than duplications. Errors from the former source can be corrected by an estimate; those from the latter are uncertain in amount and beyond elimination. In the Twelfth Census, however, for the first time an effort was made to decrease this source of error by combining records from the two available sources, the

registration records and the enumerators' returns. The method which was followed being explained at length in the census volume dealing with this subject,* it is enough here to say that a reported death-rate of less than 15 for any large and normally constituted population is so small as to afford just ground for suspecting that the population is set at too large a figure or that the reported number of deaths is too small. When for this or any other reason the office desired to test the accuracy of the local returns, the enumerators were asked to fill the mortality schedules, and the lists thus secured were carefully compared with those reported from the registration office. As a result of this, 19,807 deaths were added to the 492,862 found on the registration record, or 3.9 per cent. of the entire number. But, perhaps, it is fairer to compare the additions with the deaths found on the registration record of those areas only from which both sources of information were available. From these areas 328,607 deaths were reported, 19,807, or 6.0 per cent., of which were added from the enumerators' returns. This effort has doubtless increased the accuracy and completeness of the record of deaths in the registration area, and, in consequence, the rate of 17.8 for 1900 may be deemed a closer approach to the truth than that of 19.6 for 1890 or 20.9 for 1880. This suggests that the true death-rate for the United States may have declined between 1880 and 1900 more rapidly than the apparent rate, but no such inference is warranted because the expansion of the registration area during the intervals invalidates any comparison.

The second question of the two just raised, namely, how far is the registration area representative or typical, and, in consequence, how far may one infer from its death-rate that of the whole country? calls for more detailed examination.

This question has been considered by the Census Office, as the following passages indicate:—

* Twelfth Census, vol. iii. pp. xi.-xxiv.

The death-rate in the non-registration area, including all the western and southern States, was certainly lower than it was in the registration area, partly because in the western States especially there was an unusual proportion of adults of the ages having a comparatively low death rate, while in the eastern States, which compose the registration area, there is a greater proportion of old people, who have a comparatively high mortality. *Eleventh Census* (1890), *Vital and Social Statistics*, Part I, page 11.

The death-rate for the United States can not be accurately determined, but as the registration area with its death-rate of 17.8 per 1,000 is very largely urban, and the non-registration area is almost wholly rural in character, it is probable that the death-rate in the latter more nearly approximates the death-rate in the rural part of the registration States (15.4 per 1,000). This would fix the general death-rate of the country somewhere between 15.4 and 17.8 per 1,000. If it be assumed that the death-rate in the rural part of the registration States fairly represents the rate in the rural part of the non-registration States, the general death-rate would be about 16.3 per 1,000. It probably did not vary much from this number. *Twelfth Census* (1900), volume iii, page lvii.

These quotations indicate that in 1890 the differences in age distribution alone, and in 1900 the differences in proportion of urban population alone, between the registration area and continental United States were in mind. No reference was made to the differences of the two populations in sex composition or in race composition, and no attempt was made to measure the amount of influence any or all of these differences exercised upon the figures. To do so is the object of the present paper.

Correction I for Sex only.

It is well known that there are in continental United States about 1,600,000 more males than females.* Figures for the registration area show that that part of the United States contains about 20,000 more females than males.† Or, speaking in relative terms, in each 10,000 persons in continental United States there were 5,108 males, in each

* Twelfth Census Abstract, p. 7.

† Twelfth Census, vol. iii. p. xli.

10,000 persons in the registration area there were 4,997 males; that is, in 10,000 persons in continental United States there were 111 more males and 111 fewer females than in 10,000 persons in the registration area.

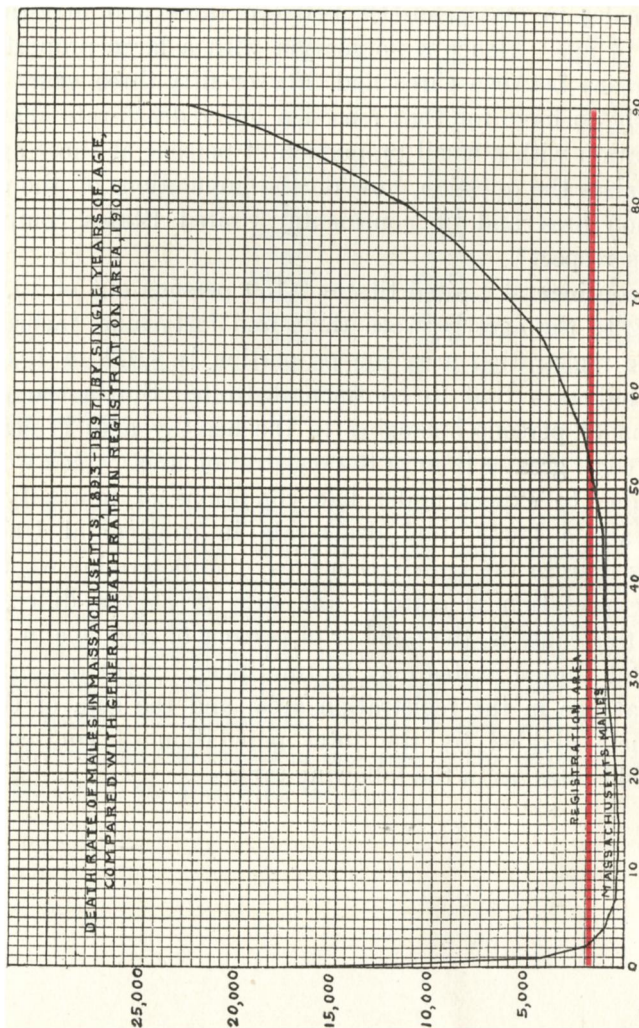
In this respect, then, the population of the registration area does not fairly represent the general population. As the death-rate of males in the registration area in 1900 was 18.95, and that of females was 16.64 per 1,000, that is, the death-rate of females was only about seven-eighths that of males, this difference between the proportions of the sexes in the registration area and the whole United States may affect the figures. A correction for it may be made by assuming that in continental United States the death-rate of each sex was the same as the death-rate of that sex in the registration area. On this assumption, if the male or female population of continental United States be multiplied by the death-rate of that sex in the registration area, and the sum of the two products divided by the total population, we obtain a corrected death-rate. The results are given in the following table:—

	Population of Continental United States.	Death-rate in Registration Area.	Computed Deaths in Continental United States.
Male	38,816,448	18.96	735,950
Female	37,178,127	16.64	618,650
Total	75,994,575	—	1,354,600

If the number of deaths thus computed be divided by the number of persons in continental United States, a death-rate of 17.82 per 1,000 results. This shows that, if persons of each sex in continental United States had the same death-rate as persons of that sex in the registration area, the total death-rate in continental United States would exceed that in the registration area by 0.02 per 1,000.

Correction II for Age only.

That the very young and the very old have a hold on life far weaker than that of persons in the prime of life is a fact of every-day observation which is confirmed and made precise by statistics. As we have no developed vital statistics for the United States, this fact can be best shown for Massachusetts. The following diagram indicates graphi-



cally the death-rate of males in Massachusetts for 1893 to 1897 at each year of age in comparison with the death-rate of the registration area of the United States for 1900, the horizontal line indicating the latter, and the curve the former.

The diagram shows that males in Massachusetts between three and fifty years of age have a lower death-rate than persons of all ages in the registration area. The data from which the diagram is derived show that the same is true of females in Massachusetts between three and fifty-three years of age. Hence a population with a large proportion of persons between three and fifty or fifty-three years old is likely to have for that reason a lower death-rate than a population with a small proportion of persons at those ages. This raises the question, how do the populations of the registration area and of continental United States compare in this respect?

In continental United States 9,159 persons out of 10,000 belong to the ages between three and forty-nine, inclusive. In the registration area the proportion is 8,971 in 10,000. This indicates that in continental United States the proportion of persons belonging to the healthy ages is nearly 2 per cent. greater than in the registration area, which would lead one to expect under like conditions of mortality at each age a lower total death-rate in continental United States than in the registration area. To determine whether this expectation is correct, and how great the difference from this cause is, the number of persons of each age in continental United States may be multiplied by the death-rate of that age in the registration area, and the sum of these products divided by the total population of continental United States, as in the following table:—

Age Period.	Population in Continental United States.	Death-rate in Registration Area.	Computed Deaths in Continental United States.
Under 1	1,916,892	165.43	317,111
1	1,768,078	46.64	82,463
2	1,830,332	20.48	37,485
3	1,824,312	13.18	24,044
4	1,831,014	9.36	17,138
5- 9	8,874,123	5.24	46,500
10-14	8,080,234	3.30	26,664
15-19	7,556,089	5.18	39,140
20-24	7,335,016	7.49	54,939
25-29	6,529,441	8.60	56,153
30-34	5,556,039	9.43	52,393
35-39	4,964,781	10.98	54,513
40-44	4,247,166	12.18	51,730
45-49	3,454,612	15.23	52,613
50-54	2,942,829	19.11	56,237
55-59	2,211,172	26.32	58,198
60-64	1,791,363	35.12	62,912
65-69	1,302,926	52.18	67,986
70-74	883,841	75.15	66,420
75-79	519,857	110.53	57,459
80-84	251,512	165.83	41,708
85-89	88,600	241.29	21,378
90-94	23,992	339.25	8,139
95 and over	9,770	418.89	4,092
Total known age	75,793,991	—	1,357,415
Computed death-rate . .	17.90	—	—

These figures fail to confirm the expectation indicated in the quotation from the census of 1890, and supported by our own provisional conclusion, that, when a correction is introduced for age only, it would lower the death-rate. To ascertain, if possible, the reason for this, the number of persons of each age to 100,000 persons of known age has been computed for continental United States, and the registration area and the excess in one area or the other at each age indicated in the following table:—

Age Period.	Number of Persons in Each 100,000 of Known Age in Continental United States.	Number of Persons in Each 100,000 of Known Age in Registration Area.	Excess in Continental United States.	Excess in Registration Area.
Under 1	2,529	2,150	379	—
1	2,332	1,939	393	—
2	2,414	2,042	372	—
3	2,406	2,066	340	—
4	2,415	2,052	363	—
5-9	11,708	9,988	1,720	—
10-14	10,660	9,058	1,602	—
15-19	9,969	9,022	947	—
20-24	9,677	9,932	—	255
25-29	8,614	9,692	—	1,078
30-34	7,330	8,559	—	1,229
35-39	6,550	7,712	—	1,162
40-44	5,603	6,369	—	766
45-49	4,557	5,009	—	452
50-54	3,882	4,210	—	328
55-59	2,917	3,188	—	271
60-64	2,363	2,592	—	229
65-69	1,719	1,852	—	133
70-74	1,166	1,268	—	102
75-79	685	753	—	68
80-84	331	365	—	34
85-89	116	129	—	13
90-94	31	32	—	1
95 and over	12	9	3	—

The preceding table shows that in each 100,000 persons in continental United States there were 1,144 more children under three years of age than there were in each 100,000 persons in the registration area. Reference to the preceding diagram, or table, shows how very much the death-rate in those three years, and especially at the first two, exceeds the death-rate at all ages. Clearly, the larger proportion of children in continental United States, a difference overlooked in previous discussions of this question, more than neutralizes the larger proportion of persons of healthy ages as a whole in continental United States.

We may conclude with confidence that, if persons of each age in continental United States had the same death-rate as persons of that age in the registration area, the total death-rate in continental United States would exceed that in the registration area by 0.10 per 1,000.

Correction III for Age and Sex.

As the correction for sex increases the death-rate 0.02 per 1,000 and for age 0.10 per 1,000, it might be thought that the two combined would increase the death-rate $0.02 + 0.10$, or 0.12 per 1,000. But the true way to make a correction for the two in combination is to multiply the population in continental United States of each sex and age by the death-rate in the registration area of corresponding sex and age, and divide the sum of the deaths thus computed by the population of known age in continental United States. The results of this process appear in the following table:—

Age Period.	Population in Continental United States.		Death-rate in Registration Area.		Computed Deaths in Continental United States.	
	Male.	Female.	Male.	Female.	Male.	Female.
Under 1	969,257	947,635	183.69	146.84	178,042	139,150
1	893,263	874,815	49.08	44.16	43,841	38,631
2	925,260	905,072	21.26	19.69	19,671	17,820
3	920,335	903,977	13.31	13.05	12,249	11,796
4	925,497	905,517	9.33	9.39	8,634	8,502
5 - 9	4,479,396	4,394,727	5.36	5.13	24,009	22,544
10-14	4,083,041	3,997,193	3.35	3.25	13,678	12,990
15-19	3,750,451	3,805,638	5.34	5.03	20,027	19,142
20-24	3,624,580	3,710,436	7.99	7.03	28,960	26,084
25-29	3,323,543	3,205,898	9.02	8.19	29,978	26,256
30-34	2,901,321	2,654,718	9.94	8.89	28,839	23,600
35-39	2,616,865	2,347,916	11.78	10.12	30,826	23,760
40-44	2,255,916	1,991,250	13.19	11.07	29,755	22,043
45-49	1,837,836	1,616,776	16.86	13.50	30,985	21,826
50-54	1,564,622	1,378,207	21.12	17.03	33,044	23,470
55-59	1,145,257	1,065,915	28.95	23.71	33,155	25,272
60-64	917,167	874,196	38.11	32.30	34,953	28,236
65-69	667,669	635,257	56.57	48.14	37,770	30,581
70-74	449,609	434,232	80.54	70.22	36,211	30,491
75-79	261,579	258,278	118.34	103.59	30,955	26,755
80-84	122,273	129,239	177.24	156.52	21,671	20,228
85-89	40,742	47,858	259.04	228.53	10,553	10,936
90-94	9,858	14,134	355.35	330.14	3,503	4,666
95 and over . . .	3,688	6,082	427.91	414.44	1,578	2,520
Total known age	38,689,025	37,104,966	—	—	742,887	617,299
Total population				75,793,991		
Total deaths				1,360,186		
Computed death-rate				17.94		

This table shows that, if persons of each age and sex in continental United States had the same death-rate as persons of that age and sex in the registration area the total death-rate in continental United States would exceed that in the registration area by 0.14 per 1,000.

Correction IV for Race only.

In continental United States 87.91 per cent. of the population are white, and 12.09 are colored. In the registration area 95.66 per cent. are white, and 4.34 per cent. are colored. It is clear that in this respect the population of the registration area is far from representative. The difference is the more important because of the wide difference between the death-rates of the two races.

A correction for race only may be made by computing the death-rates of the two races separately for the registration area, and multiplying the white population and the colored population, respectively, of continental United States by the rates thus found. The death-rate of whites in the registration area was 17.26 per 1,000; that of the colored was 29.59 per 1,000. The results of this correction are shown in the following table:—

	Population of Continental United States.	Death-rate in Registration Area per 100,000.	Computed Deaths in Continental United States.
White	66,809,196	1,726.1	1,153,194
Colored	9,185,379	2,958.8	271,777
Total	75,994,575	—	1,424,971

Dividing the above number of computed deaths by the total population of continental United States, a death-rate of 18.75 is reached. This shows that, if persons of each race in continental United States had the same death-rate as

persons of that race in the registration area, the total death-rate in continental United States would exceed that in the registration area by 0.95 per 1,000.

Correction V for Race and Sex.

The same method may be applied to a correction for race and sex in combination. The results are indicated in the following computation:—

	Population in Continental United States.	Death-rate in Registration Area per 1,000.	Computed Deaths in Continental United States.
White:			
Male	34,201,735	18.40	629,312
Female	32,607,461	16.12	525,632
Colored:			
Male	4,614,713	31.42	144,994
Female	4,570,666	27.82	127,156
Total	75,994,575	—	1,427,094

If the number of deaths thus computed be divided by the number of persons in continental United States, a death-rate of 18.78 results. This shows that, if persons of each race and sex in continental United States had the same death-rate as persons of that race and sex in the registration area, the total death-rate in continental United States would exceed that in the registration area by 0.98 per 1,000.

Correction VI for Race and Age.

It has already appeared that correction for age only raises the death-rate of continental United States by 0.10 per 1,000, and for race only by 0.95 per 1,000, but that it is inadmissible to take the sum of these two corrections as the true correction for race and age combined. A trustworthy result can

be reached only by multiplying the population in continental United States of each race and age by the death-rate in the registration area of the same race and age, and dividing the sum of the deaths thus computed by the total population of continental United States of known age. This is done in the following table:—

Age Period.	Population in Continental United States.		Death-rate in Registration Area.		Computed Deaths in Continental United States.	
	White.	Colored.	White.	Colored.	White.	Colored.
Under 1	1,665,007	251,885	158.03	371.46	263,121	93,565
1	1,529,181	238,897	44.13	117.11	67,482	27,977
2	1,574,382	255,950	19.41	49.37	30,558	12,636
3	1,573,460	250,852	12.69	26.89	19,967	6,745
4	1,577,922	253,092	9.05	17.88	14,280	4,525
5-9	7,638,326	1,235,797	5.05	10.40	38,573	12,852
10-14	6,959,238	1,120,996	3.06	9.10	21,295	10,201
15-19	6,543,189	1,012,900	4.75	14.13	31,080	14,312
20-24	6,335,044	999,972	6.94	16.69	43,965	16,689
25-29	5,762,980	766,461	8.13	16.79	46,853	12,868
30-34	5,004,444	551,595	9.06	17.04	45,340	9,399
35-39	4,460,575	504,206	10.56	19.18	47,103	9,670
40-44	3,852,143	395,023	11.64	23.35	44,838	9,223
45-49	3,105,678	348,934	14.63	28.05	45,436	9,787
50-54	2,633,981	308,848	18.45	34.15	48,596	10,547
55-59	2,021,217	189,955	25.68	44.54	51,904	8,460
60-64	1,620,658	170,705	34.46	55.99	55,847	9,557
65-69	1,195,295	107,631	51.60	73.45	61,677	7,905
70-74	808,097	75,744	74.62	95.51	60,300	7,234
75-79	477,720	42,137	110.21	124.03	52,649	5,226
80-84	224,717	26,795	165.88	164.03	37,276	4,395
85-89	78,027	10,573	242.82	201.45	18,946	2,129
90-94	18,319	5,673	342.85	283.22	6,280	1,606
95 and over . . .	4,544	5,226	431.64	368.91	1,961	1,927
Total known age	66,664,144	9,129,847	—	—	1,155,327	309,435

Total population	75,793,991
Total deaths	1,464,762
Computed death-rate	19.32

The preceding table shows that, if persons of each race and age in continental United States had the same death-rate as persons of that race and age in the registration area,

the total death-rate in continental United States would exceed that in the registration area by 1.52 per 1,000.

Correction VII for Race, Sex, and Age.

The method already used in correcting for age and sex, race and sex, and race and age, may be extended to this more complicated field. In the following table the number of persons of each race, sex, and age in continental United States has been multiplied by the death-rate of the corresponding race, sex, and age in the registration area.

The table on the following page shows that, if persons of each race, sex, and age in continental United States had the same death-rate as persons of that race, sex, and age in the registration area, the total death-rate in continental United States would exceed that in the registration area by 1.57 per thousand.

Correction VIII for the Middle of the Year.

The fact that all the death-rates for the registration area have been computed by using as a divisor the population enumerated at the end of the year rather than that estimated at the middle of the year has already been mentioned. The correction due to this source, in combination with the corrections due to sex, age, and race, may be roughly estimated by reducing the final divisor in the preceding table to 75,342,232, the estimated population of continental United States December 1, 1899. This results in a death-rate of 19.49 and shows that, if correction be made for sex, age, race and the middle of the year, the total death-rate in continental United States would exceed that in the registration area by 1.69 per thousand.

Each of the corrections thus far introduced has resulted in raising the probable death-rate of continental United States above that of the registration area. With the ma-

Age Period.	Population in Continental United States.				Death-rate in Registration Area.				Computed Deaths in Continental United States.			
	White.		Colored.		White.		Colored.		White.		Colored.	
	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.	Male.	Female.
Under 1	844,238	820,769	125,019	126,866	175.94	139.78	403.87	339.69	148,535	114,727	50,491	43,095
1	774,700	754,481	118,563	120,334	46.44	41.79	126.02	108.63	35,977	31,529	14,941	13,071
2	707,349	777,033	127,911	128,039	20.17	18.64	51.54	47.28	16,082	14,483	6,592	6,053
3	796,172	777,288	124,163	126,689	12.86	12.53	26.38	27.39	10,238	9,739	3,275	3,470
4	798,996	778,926	126,501	126,591	9.08	9.03	16.23	19.52	7,254	7,033	2,053	2,471
5-9	3,862,349	3,775,977	617,047	618,750	5.19	4.91	9.92	10.85	20,045	18,540	6,121	6,713
10-14	3,519,303	3,439,935	563,738	557,258	3.15	2.98	8.52	9.62	11,085	10,251	4,360	5,360
15-19	3,258,090	3,285,099	492,361	520,539	4.96	4.56	14.05	14.19	16,160	14,980	6,917	7,386
20-24	3,145,481	3,189,563	479,089	520,873	7.36	6.56	19.43	14.48	23,150	20,923	9,308	7,542
25-29	2,942,882	2,820,098	380,661	385,800	8.52	7.76	18.00	15.65	25,073	21,883	6,851	6,037
30-34	2,619,446	2,384,998	281,875	269,720	9.51	8.58	18.50	15.44	24,910	20,463	5,214	4,164
35-39	2,360,348	2,100,227	256,517	247,689	11.35	9.71	20.01	18.25	26,789	20,393	5,132	4,520
40-44	2,055,176	1,796,967	200,740	194,283	12.68	10.51	23.36	23.35	26,059	18,886	4,689	4,536
45-49	1,651,972	1,453,706	185,864	163,070	16.25	12.93	29.68	26.19	26,844	18,796	5,516	4,270
50-54	1,396,035	1,237,946	168,587	140,261	20.42	16.42	36.58	31.44	28,507	20,327	6,166	4,409
55-59	1,040,235	980,982	105,022	84,933	28.29	23.11	47.15	41.70	29,428	22,670	4,951	3,541
60-64	825,213	795,445	91,954	78,751	37.45	31.62	58.80	53.36	30,904	25,151	5,406	4,202
65-69	608,715	586,580	58,954	48,677	55.93	47.62	80.67	67.02	34,045	27,932	4,755	3,262
70-74	411,658	396,439	37,951	37,793	79.81	69.85	111.93	83.32	32,854	27,691	4,247	3,148
75-79	240,284	237,436	21,295	20,842	117.80	103.42	144.96	109.74	28,305	24,555	3,086	2,287
80-84	110,087	114,609	12,186	14,609	176.51	157.11	208.33	139.57	19,431	18,009	2,538	2,038
85-89	35,838	42,189	4,904	5,669	260.03	230.33	298.92	185.94	9,318	9,717	1,122	1,054
90-94	7,607	10,712	2,251	3,422	355.30	335.64	356.25	254.85	2,702	3,595	801	872
95 and over	1,735	2,809	1,953	3,273	420.47	437.55	465.28	333.33	729	1,229	908	1,090
Total known age	34,103,909	32,560,235	4,585,116	4,544,731	—	—	—	—	634,424	523,502	165,883	144,591
Total population												
Total deaths												
Total death-rate												

Total population 75,793,991
 Total deaths 1,468,400
 Total death-rate 19.37

terial in hand, no further corrections can be ventured. Undoubtedly, the two differences between the population of continental United States and the population of the registration area most significant for the death-rate are the larger proportion of negroes in continental United States and the larger proportion of urban population in the registration area. Negroes have a higher death-rate than whites; city dwellers, a higher death-rate than country dwellers. These two differences would tend thus to offset each other. A correction for the race difference has been made. But every effort to introduce a correction for the difference in the proportion of city dwellers has been baffled by the fact that there is in the United States no large and representative body of rural population wherein deaths are reported with sufficient completeness and accuracy to make the resultant death-rates significant.

The net result of this inquiry is thus to show that the effect of every correction which can be made with any approach to accuracy is to raise the death-rate of continental United States above that of the registration area, and to fix a maximum limit of 19.5 per 1,000 for the death-rate of continental United States in 1900. Perhaps the writer may venture to express it as his personal opinion, although not susceptible of demonstration, that the minimum limit can not be lower than the death-rate in the registration area, namely, 17.8 per 1,000.